CLAIMS

1. A method of painting a surface in a predetermined color, comprising the steps of providing a paint including a film-forming binder component for forming a film of the paint on the surface, a color-producing component for providing the predetermined color on the surface, and a fire-retardant component adapted to protect the surface from consequences of fire; and painting the surface with said paint so a to impart the predetermined color to the surface and also to protect the surface from fire.

2. A method as defined in claim 1, wherein said providing includes using the fire-retardant component which includes at least one phosphate selected from the group consisting of melamine polyphosphate, ammonium polyphosphate, melamine diphosphate, melamine pyrophosphate, and melamine phosphate.

3. A method as defined in claim 1, wherein said providing includes using the fire-retardant component which includes melamine or its derivative selected from the group consisting of melamine cyanurate, melamine borate, melamine polyphosphate, melamine diphosphate, melamine pyrophosphate and melamine phosphate.

4. A method as defined in claim 1, wherein said providing includes using said fire retardant component which includes a charring agent, a blowing agent and an additional element which includes phosphate or its derivatives or melamine or its derivatives.

5. A method as defined in claim 1, wherein said providing includes using said fire retardant component which does not exceed 15 weight % of the paint.

6. A method as defined in claim 1, wherein said providing includes using said fire-retardant component which includes melamine, pentaerythritol and melamine polyphosphate.

7. A method as defined in claim 6, wherein said providing includes using said fire retardant component which include 5.25 % of melamine, 5.25 weight % of pentaerythritol; and 4.50 weight % of melamine polyphosphate of total weight of the paint.

8. A method as defined in claim 1, wherein said providing includes using said paint in which additional components including a filler and an additive are added.

9. A paint for painting a surface in a predetermined color, comprising a film-forming binder component for forming a film of the paint on the surface; a color-producing component for providing the predetermined color on the surface; and a fire-retardant component adapted to protect the surface from consequences of fire, such that when a surface is painted with the paint, the predetermined color is imparted to the surface and the surface is protected from fire.

10. A paint as defined in claim 9, wherein said fire-retardant component includes at least one phosphate selected from the group consisting of melamine polyphosphate, ammonium polyphosphate, melamine diphosphate, melamine pyrophosphate, and melamine phosphate.

11. A paint as defined in claim 9, wherein said fire-retardant component includes melamine or its derivative selected from the group consisting of melamine cyanurate, melamine borate, melamine

polyphosphate, melamine diphosphate, melamine pyrophosphate and melamine phosphate.

12. A paint as defined in claim 9, wherein said fire retardant component includes a charring agent, a blowing agent and an additional element which includes said phosphate or its derivatives or said melamine or its derivatives.

13. A paint as defined in claim 9, wherein said fire retardant component does not exceed 15 weight % of the paint.

14. A paint as defined in claim 9, wherein said fire retardant component includes melamine, pentaerythritol, and melamine polyphosphate.

15. A paint as defined in claim 14, wherein said fire retardant component include 5.25 weight % of melamine, 5.25 weight % of pentaerythritol, and 4.50 weight % of melamine polyphosphate of total weight of the paint.

16. A paint as defined in claim 9; and further comprising a filler and an additive.

17. A paint as defined in claim 9, wherein the paint includes the following components:

Example 1
Epoxy Paint-Two Components

Part A

Function	Material	Weight %
Liquid Epoxy Resin	Epotuf 37-127	32.80 Film Forming Binder
Diluent	Benzyl Alcohol	3.75 Film Forming Binder
Dispersant	BYK P-104S	0.32 Additives
Anti-Crater Additive	BYK A-530	0.15 Additives
Flow Additive	BYK 501	0.16 Additives
Prime Pigment	Titanox 2020	12.3 Color Producing Component
Extender	Microna 7	18.99 Dry Powder Component
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component

Part B

Polyamine Hardener	Epotuf 37-801	13.32 Film Forming Binder
Diluent	Benzyl Alcohol	3.21 Film Forming Binder
		100.00

Mix Part A/Part B 4/1 by volume

18. A paint as defined in claim 9, wherein the paint includes the following components:

Example 2

Alkyd Undercoat

Function	Material	Weight %
Medium Oil Aklyd 80%	Beckosol AA-203	31.48 Film Forming Binder
Solvent	Mineral Spirits	21.94 Volatile Component
Dispersant	Soya Lecithin	0.13 Additives
Thixotrops	Thixatrol ST	0.32 Thixotrope
Sag Control	Post 4	0.44 Thixotrope
Cobalt Drier	12% Cobalt Naphthenate	0.08 Additives
Calcium Drier	6% Calcium Naphtenate	0.78 Additives
Anti-Skin Agent	Methyl Ethyl Ketoxine	0.33 Additives
Prime Pigment	Tipure 902	21.38 Color Producing Comp
Extender Pigment	Nicron 604	8.12 Dry Powder Component
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component
		100.00

19. A paint as defined in claim 9, wherein the paint includes the following components:

Example 3

Urethane Enamel

Function	Material	Weight %
Oil Modified Polyurethane	Spenkel F47-M-60	50.10 Film Forming Binder

Dispersant	Nuosperes 657	0.46 Additives
Thixatrope	Bentone SD-1	0.95 Thixotrope
Solvent	Mineral Spirits	6.18 Volatile Component
Prime Pigment	Tronox CR-828	23.95 Color Producing Comp
Cobalt Drier	12% Cobalt Naphthenate	0.38 Additives
Calcium Drier	6% Calcium Naphthenate	1.26 Additives
Zirconium Drier	24% Zirconium Naphthanete	1.61 Additives
Anti-Skin Agent	Exkin #2	0.11 Additives
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerytritol	5.25 Fire Retardant Component
		100.00

20. A paint as defined in claim 9, wherein the paint includes the following components:

Example 4

Strippable Vinyl Coating

Function	Material	Weight %
Vinyl Resin High M.W.	Ucar YVNS	7.38 Film Forming Binder
Vinyl Resin Low M.W.	Ucar VYHD	3.69 Film Forming Binder
Plasticizer	Dioctyl Phthalate	2.88 Film Forming Binder
White Pigment	TiPure 902	6.50 Color Producing Component
Diluent	Toluene	22.20 Volatile Component
Ketone Solvent	Methyl Isobutyl Ketone	20.95 Volatile Component
Acetate Solvent	Butyl Acetate	21.40 Volatile Component
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component
		100.00

21. A paint as defined in claim 9, wherein the paint includes the following components:

Example 5

Nitrocellulose Satin Lacquer

Function	Material	Weight %

Low MW Nitrocellulose	Nitrocellulose 1/4 sec	6.75 Film Forming Binder
High MW Nitrocellulose	Nitrocellulose ½ sec	0.10 Film Forming Binder
Diluent	Toluene	13.75 Volatile Component
Lateral Solvent	Isopropanol	2.70 Volatile Component
Fast Solvent	Butyl Acetate	27.60 Volatile Component
Slow Solvent	PM Acetate	2.70 Volatile Component
Coconut Alkyd 70% in BA	Bookosol 91-470	12.78 Film Forming Binder
Plasticizer	Dioctyl Phthalate	1.34 Film Forming Binder
White Pigment	TiPure 902	9.80 Color Producing Comp
Crosslinker	Cymel 303	6.95 Film Forming Binder
Crosslinker Catalyst	Butyl Acid Phosphate	0.53 Additives
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component
		100.00

22. A paint as defined in claim 9, wherein the paint includes the following components:

Example 6

Eggshell Latex Paint

Function	Material	Weight %
Solvent	Water	25.3 Volatile Component
Dispersant	Potassium Tripolyphosphate	0.22 Additives
Surfactant	Igepal CO-630	0.84 Additives
Defoamer	Colloid 643	0.23 Additives
Wet Edge Control	Propylene Glycol	2.77 Additives
Biocide	Nuosept 95	0.38 Additives
White Pigment	Tipure 902	18.11 Color Producing Comp
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.5 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component
Celluolosic Thickener	Bernocol E411 FQ	0.32 Thixotrope
Latex Polymer 55%	Rovace 9100	34.88 Film Forming Binder
pH Adjustment	28% Ammonia Hydroxide	0.13 Additives
Associative Thickener	Acrysol RM-5	1.82 Thixotrope
		100.00

Method of Preparation

The above samples were prepared by a Cowles High Speed Disperser. Following a normal paint manufacture technique, the powdered materials were dispersed at highspeed into a suitable amount of the vehicle which contained the dispersants and wetting agents. After the dispersion was complete the speed was reduced balance of the vehicle was added together with the remaining ingredients in the formula.

23. A paint as defined in claim 9, wherein the paint includes the following components:

Example 7

Acrylic Powder Coating

Function	Material	Weight %
Glycidyl Acrylic Polymer	Fine-Clad A-207-SA	56.90 Film Forming Binder
Crosslinker	Dodecanedioic Acid	10.83 Film Forming Binder
Flow Additive	Silwet L-7500	0.33 Additives
White Pigment	Titanox 2020	16.94 Color Producing Comp
Blowing Agent	Melamine	5.25 Fire Retardant Component
Catalyst	Melamine Polyphosphate	4.50 Fire Retardant Component
Carbonific	Pentaerythritol	5.25 Fire Retardant Component

100.00

Bake Temperature: 20 minutes at 150 C.

Method of Preparation

Powders were mixed and blended using a W&P ZSK-30 Blender.
Barrel Temperature 60/80 C.
Screw Speed: 250 rpm.
Classification: 100% through 200 mesh.

24. A method of producing a paint for painting a surface in a predetermined color, comprising the steps of mixing a film-forming binder component for forming a film of the paint on the surface, and a color-producing component for providing the predetermined color on the surface; and adding a fire-retardant component adapted to protect the surface from consequences of fire, so that when a surface is painted with the thusly produced paint, the predetermined color is imparted to the surface and the surface is protected from fire.

25. A method as defined in claim 24, wherein said adding includes using the fire-retardant component which includes at least one phosphate selected from the group consisting of melamine polyphosphate, ammonium polyphosphate, melamine diphosphate, melamine pyrophosphate, and melamine phosphate.

26. A method as defined in claim 24, wherein said adding includes using the fire-retardant component which includes melamine or its derivatives selected from the group consisting of melamine cyanurate, melamine borate, melamine polyphosphate, melamine diphsophate, melamine pyrophosphate and melamine phosphate.

27. A method as defined in claim 24, wherein said adding includes using said fire retardant component which includes a charring agent, a blowing agent and an additional element which includes said phosphate or its derivatives or said melamine or its derivatives.

28. A method as defined in claim 24, wherein said adding includes using said fire retardant component which does not exceed 15 weight % of the paint.

29. A method as defined in claim 24, wherein adding includes using said fire retardant component which includes melamine, pentaerythritol, and melamine polyphosphate.

30. A method as defined in claim 29, wherein adding includes using said fire retardant component which include 5.25 weight % of melamine, 5.25 weight % of pentaerythritol, and 4.50 weight % of melamine polyphosphate of total weight of the paint.

31. A method as defined in claim 24; and further comprising introducing into the paint a filler and an additive.